AN EXPERIMENTAL EXAMINATION OF LEARNED HELPLESSNESS IN NATIVE AMERICAN AND CAUCASIAN COLLEGE STUDENTS

By

JENNIFER LEE HICKS

Bachelor of Arts
Southeastern Oklahoma State University
Durant, Oklahoma
1993

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1998

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
May, 2004

AN EXPERIMENTAL EXAMINATION OF

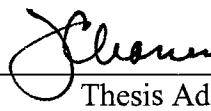
LEARNED HELPLESSNESS

IN NATIVE AMERICAN

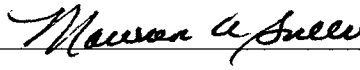
AND CAUCASIAN

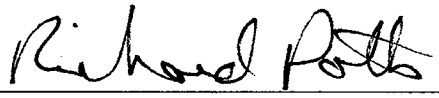
COLLEGE STUDENTS

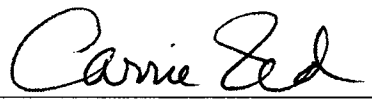
Thesis Approved:

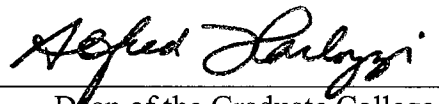


Thesis Advisor









Dean of the Graduate College

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my major advisor, Dr. John Chaney, for his supportive guidance and personal encouragement throughout the course of our work together. I would also like to thank my other committee members, Dr. Maureen Sullivan, Dr. Richard Potts, and Dr. Carrie Winterowd, whose assistance and encouragement have been invaluable. Further, I would like to thank the Department of Psychology for providing me with excellent training in clinical and research skills.

I would like to express my gratitude to the psychology faculty members and students who provided me with assistance throughout the course of this study: Dr. Kevin Hommel, Dr. Gayle Iwamasa, Dr. Marie Miville, Kathalena Avendano, and Perry Heath. Further, I would like to thank my graduate advisor, Patricia Alexander, for her willingness to go beyond the call of duty in order to provide me with numerous resources and personal support as I worked to complete my dissertation project. I would also like to express my appreciation to my close friend and colleague, Cindy Nichols-Anderson, who served as a frequent and invaluable source of professional and personal support.

I would like to express my appreciation to my entire family for their ongoing love, understanding, and assistance. I want to thank my mother, who never failed in her support throughout my graduate career. I would also like to thank my husband, James, for his never-ending patience, assistance, and encouragement during times of difficulty.

Finally, I would like to thank God, for with Him, all things are possible.

TABLE OF CONTENTS

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

Introduction

Despite increased awareness and investigation of multicultural issues, minority individuals in the United States continue to exhibit lower levels of academic achievement overall than non-minority individuals (Locke, 1992). In addition, minority individuals attain lower levels of income and are underrepresented within higher education settings as compared to majority group members (ACE, 2000; Steinberg, Dornbusch, & Brown, 1992; U.S. Department of Education, 1998). These issues are of particular concern among Native American populations. Specifically, the median income reported for Native Americans in 1995 was lower than that reported for any other minority group (U.S. Bureau of the Census, 1995). Moreover, Brod and McQuiston (1983) reported that the median level of education attained among Native Americans was "less than the completion of high school" (p. 4), while the median level of education attained for the entire United States population was at least one year of college.

Researchers have investigated a number of variables that may account for lower educational attainment among minority individuals. However, a primary difficulty faced by researchers in establishing a comprehensive picture of the manner in which cultural issues may influence academic achievement relates to the complex nature of such issues. Specifically, the construct of ethnicity, which is a more subjective classification than racial status, has been associated with highly variable perceptions and behaviors, even among individuals within fairly homogenous objective racial categories (Oetting & Beauvais, 1991; Pavel, Sanchez, & Machamer, 1994; Phinney, 1992). In addition,

perceptions or cognitions of minority group members regarding their ethnicity appear to be better predictors of such variables as academic achievement than racial status alone (Oetting & Beauvais, 1991). Hence, researchers are faced with the difficulty of distinguishing between racial and cultural variables among minority group members.

In a similar manner, studies investigating the relationship between socioeconomic status and academic achievement among minority group individuals have indicated that level of perceived deprivation is a better predictor of performance than objective SES level classification (Chaney, 2001; Robertson, 1998). These results indicate that it is erroneous to conclude that individuals objectively classified as poverty-stricken will consider themselves to be deprived. For this reason, it is necessary for researchers to distinguish between these two factors in order to gain a clear understanding of the relationship between deprivation and low levels of achievement among minority individuals.

Researchers have begun to delineate a number of variables, such as ethnic identity and perceived deprivation that appear to be of particular importance in predicting academic achievement among different cultural groups. However, few studies have attempted to provide a theoretical account that would integrate the vast amount of literature investigating cultural and class variables related to academic achievement. Some studies have provided support for the utility of the learned helplessness model of achievement motivation, particularly the attributional reformulation, in explaining variables related to academic achievement among minority groups (Chaney, 2001, Robertson, 1998). However, these studies have been based exclusively on self-report measures and correlational data. Moreover, there is evidence to suggest that traditional

views of helplessness attributions may be inadequate in accounting for lower levels of achievement displayed by minority students in general, and Native American students in particular. Specifically, some studies have found an inverse relationship between pessimistic attributional style and low academic performance among minority students (Chaney, 2001; Robertson, 1998). No attempt has been made to examine the manner in which learned helplessness may operate to influence the performance of minority individuals within an experimental context.

A vast amount of support has been provided for the theory of learned helplessness, which refers to the development of behavioral and motivational deficits among both animals and humans following the occurrence of events beyond their control (Abramson, Seligman, & Teasdale, 1978; Overmier & Seligman, 1967; Seligman & Maier, 1967). A particular strength of learned helplessness theory relates to the experimental design and methodology that has been used by researchers for a number of years to investigate the theory within a number of contexts.

The present paper provides a review of the literature regarding the various sociocultural influences on cognitive functioning or achievement motivation of minority individuals. Specifically, a discussion of the literature regarding ethnic identity and perceived deprivation as they influence achievement behaviors of minority individuals is provided. The chronic and uncontrollable nature of these variables lends them to investigation within the theoretical framework of learned helplessness. For this reason, a review of the theory and the experimental evidence for learned helplessness is provided as well.

The present study then examines the impact of experimentally-induced learned helplessness on problem-solving task performance in Native American college students, compared to an age-matched Caucasian sample. The rationale for the present study is based on two related assumptions: 1) various sociocultural factors associated with race, such as racism and acculturative stress, represent chronic, uncontrollable stressors over which minority individuals have little control (Clark, 1964; Spencer, Kim, & Marshall, 1987; Sue, 1977); and 2) repeated exposure to lack of control over the outcomes of life situations, or behavior-outcome non-contingency, has been consistently demonstrated within the literature to result in increased susceptibility to learned helplessness deficits (Peterson & Barrett, 1987; Peterson, Maier, & Seligman, 1993; Seligman & Schulman, 1986). Based on this association between non-contingency and helplessness, it would seem logical to anticipate that minority individuals, having potentially experienced higher levels of non-contingent outcomes in their life experiences than non-minority individuals overall, would be more susceptible to developing learned helplessness deficits following exposure to experimentally-induced behavior-outcome non-contingency.

Literature Review

Cultural Identification

As a result of continuous interaction between two or more distinct cultural groups, cultural changes necessarily occur, termed *acculturation* (Redfield, Linton, & Herskovits, 1936). Although numerous models of acculturation exist, Berry, Kim, Minde, and Mok (1987) specified a number of manifestations of the process within their model. These manifestations include: adaptation of minority culture to the dominant culture (assimilation), maintenance of ethnic ties without rejecting the values and traditions of the majority culture (integration), or resistance to cultural change (separation). Berry, et al. (1987) address five areas of change that characterize the process of acculturation, including: physical changes, biological changes, cultural changes, new sets of social relationships, and psychological changes.

Graves (1967) recognized that the process of acculturation is an individual as well as a group-level phenomenon. Researchers have attempted to define and measure the development of *ethnic identity* in order to examine the manner in which such factors as academic performance are influenced by the process (Oetting & Beauvais, 1991; Phinney, 1992). Ethnic identity development research has evolved from developmental models of general identity formation. According to Marcia (1966), the four identity statuses related to self-concept formation include: (1) Identity Diffusion—individuals have neither engaged in exploration nor made a commitment to a particular identity, (2) Foreclosed Status—individuals have made a commitment without exploration, usually

based on parental values, (3) Moratorium Status—individuals engage in the process of exploration without making a commitment to identity, and (4) Identity Achieved Status—individuals make a firm commitment following a period of exploration.

Kalsner (1992) points out that, "racial identity development is different from other aspects of identity development because sociocultural communications from the environment to the individual typically focus on group-related appearance instead of an individual's unique abilities and interests" (p. 5). Despite the fact that research has indicated a relationship between minority group membership and academic performance, researchers have typically failed to distinguish between race and ethnic identity. Oetting and Beauvais (1991) found that cultural identification is an important variable due to the fact that such an identification is orthogonal in nature. In other words, an individual may identify with more than one culture. Moreover, when individuals identify with certain aspects of one culture, they are not necessarily precluded from identifying with particular aspects of another culture.

Helms (1990) has argued that minority group members spend more cognitive and emotional energy in the ethnic identity development process than non-minority group members. Results of Phinney's (1992) study provided support for this argument, in that minority students achieved higher levels of ethnic identity development than non-minority students overall. These results suggest that minority group members are faced with an ethnic identity *crisis*, which forces them to begin the exploration process of ethnic identity, whereas non-minority individuals are less likely to experience a similar crisis.

From a learned helplessness perspective, distinctiveness of the dominant culture may represent a chronic stressor over which minority individuals have little control. Several studies have provided support for this theory (Berry & Annis, 1974; Berry, et al., 1987; Loo & Rolison, 1986; Livingston & Stewart, 1987). Results of Berry, et al.'s (1987) study indicated that acculturation is associated with a number of stress behaviors, such as confusion, anxiety, and depression. In addition, a number of researchers have demonstrated that greater levels of cultural distinctiveness predict higher levels of acculturative stress and difficulty in adapting to the demands of the environment (Berry & Annis, 1974; Loo & Rolison, 1986; Livingston & Stewart, 1987).

At the individual level, communications from the environment regarding the meanings of ethnicity may represent uncontrollable stressors that influence the manner in which ethnic identity development progresses for a particular minority individual. Helms (1990) addresses the importance of the tone of the message (i.e., positive versus negative) that is communicated to minority individuals regarding their ethnicity, both by members and non-members of their ethnic groups. She further emphasized that individuals who receive messages from their environment that devalue their ethnic group often have a difficult time in developing a healthy ethnic identity. Indeed, there is evidence that minority individuals exhibit higher levels of self-esteem and academic efficacy within environments where they are surrounded by other minority individuals versus environments in which the prevalence of majority group members are higher (Fleming, 1985; 1986).

Perceived Deprivation

Researchers investigating the effects of poverty on academic achievement have traditionally emphasized such factors as socioeconomic status or the environmental factors associated with socioeconomic impoverishment, such as overcrowding and noise pollution. Classification of individuals according to socioeconomic status (e.g., as established by Hollingshead, 1957) is divided into three groups: upper-class, middle-class, and lower-class. These distinctions between particular classes of individuals leads to the establishment of particular lifestyles characteristic of each class. The lifestyle characteristics most often associated with lower-class families include "unemployment, low wages, underemployment, little property ownership, no savings, and lack of food reserves (Sue & Sue, 1990, p. 43)." Based on this classification system, lower-class individuals are considered to experience constant threat to basic well-being.

Calliste (1982) found a positive relationship between poverty and academic failure. As compared to lower-class individuals, students from a higher SES displayed higher levels of academic achievement, better self-concepts, and different employment aspirations. In addition, Cairns and Cairns (1989) found that SES levels were predictive of early school dropout rates.

A number of studies have investigated the environmental factors associated with socioeconomic impoverishment, such as homelessness, high residential density, and noise pollution. Indeed, such factors have been found to be related to an increased risk for academic failure among students (Glass & Singer, 1972; Rafferty & Shinn, 1991; Rodin, 1976). Specifically, development of cognitive deficits has been observed to develop more frequently among individuals experiencing chronic exposure to these environmental

factors associated with lower-class SES. Indeed, researchers have found a link between high levels of objective deprivation and development of cognitive and behavioral deficits (Mal, Jain, & Yadav, 1990).

Based on these studies which have established a link between poverty and poor academic achievement, it is reasonable to expect that lower-class individuals perceive themselves as socioeconomically deprived. However, in failing to distinguish between socioeconomic impoverishment based on objective classification and perceived deprivation based on an individual's subjective perception that his or her basic needs have not been met, researchers have overlooked a number of important variables.

Although researchers have found a link between high levels of objective deprivation and development of cognitive and behavioral deficits (Mal, Jain, & Yadav, 1990), it is erroneous to conclude that individuals objectively classified as poverty-stricken will consider themselves to be deprived. In fact, Chaney (2001) found that SES and perceived deprivation were unrelated among minority participants, yet these two factors were related among non-minority participants. Such a finding suggests that it is indeed necessary to distinguish between these two factors.

With regard to learned helplessness, Nolen-Hoeksema (1992) views socioeconomic impoverishment as an uncontrollable stressor. From this perspective, environmental stressors associated with being raised in poverty could increase the risk that children raised in such environments will develop cognitive, emotional, and behavioral deficits. As mentioned previously, minority individuals have historically comprised a large percentage of families living below the poverty line. Hence, chronic exposure of minority individuals to poverty-related deprivation could result in increased

susceptibility of these individuals to development of helplessness. As a result, helplessness deficits could account, at least in part, for lower levels of academic performance displayed by minority individuals as compared to Caucasians.

Learned Helplessness

Overmier and Seligman (1967) and Seligman and Maier (1967) first observed the development of behavioral and motivational deficits among animals following the occurrence of events beyond their control, a phenomenon which came to be known as *learned helplessness*. In these experiments, dogs were placed in hammocks and administered a series of inescapable shock trials. When the dogs were later provided with the opportunity to escape shock, they did not utilize this control. In essence, following exposure to uncontrollable negative events, the animals learned to be helpless, even in situations in which the capacity for controlling outcome was available to them.

Experimental studies investigating the extent to which behavior-outcome non-contingency produces helplessness deficits have been conducted across numerous species, with relatively consistent results obtained. Helpless responses following exposure to non-contingency have been observed among cats, fish, rats, and primates (Maier, Albin, & Testa, 1973; Padilla, Padilla, Ketterrer, & Giacalone, 1970; Suomi, & Harlow, 1972; Thomas & Balter, 1974).

Hiroto's (1974) experimental investigation of learned helplessness among humans revealed results similar to those obtained with animals. Specifically, college students exposed to inescapable loud noise exhibited passive acceptance of aversive noise in subsequent controllable situations. Alternatively, groups who had received either no noise or escape training demonstrated the ability to escape and avoid noise in later trials.

Hence, it was demonstrated that humans were susceptible to developing helplessness deficits that influenced performance on experimental tasks.

Hiroto and Seligman's (1975) study both provided further support for the theory of learned helplessness among humans and demonstrated the generalizability of learned helplessness deficits across experimental tasks. In this study, students who received instrumental helplessness training demonstrated helplessness on cognitive as well as instrumental tasks. Similarly, students who received cognitive helplessness training demonstrated helplessness on instrumental as well as cognitive tasks. These somewhat alarming results demonstrated that individuals who were exposed to a single form of environmental non-contingency nevertheless exhibited helplessness deficits in more than one area of functioning.

Peterson and Seligman (1984) observed such symptoms as passivity, sadness, anxiety, hostility, and low self-esteem to be associated with the development of helplessness among humans. The parallels between helplessness and symptoms displayed by individuals diagnosed with the syndrome of major depression have been observed by a number of researchers (Peterson & Seligman, 1984, Peterson, Bettes, & Seligman, 1985; Rosenhan & Seligman, 1989). Thus, helplessness may be viewed as a risk factor for depressive symptomatology.

According to Peterson, Maier, and Seligman (1993), learned helplessness is comprised of three components: 1) non-contingency between behavior and outcome, 2) the expectation that future outcomes will be noncontingent upon future behaviors, and 3) passive behavior. From this theoretical perspective, individuals who repeatedly experience uncontrollable negative life events are more susceptible to developing learned

helplessness, in that they learn that their behaviors across a number of situations are unrelated to outcome. According to the learned helplessness paradigm, individuals then begin to react to situations by engaging in little or no effort, despite the actual level of control they may have over these situations. As a result, the probability of failure occurring in future situations is increased, and the belief that behavior is unrelated to outcome is strengthened.

Peterson, Maier, and Seligman (1993) cite Villanova and Peterson's (1991) meta-analysis of learned helplessness experiments with human participants, which demonstrated that overall, exposure of humans to uncontrollable events disrupted performance at test tasks. In fact, the effect, described as *moderate*, was demonstrated to be as robust as effects of learned helplessness found among animals, if not always as dramatic. Results of the meta-analysis further revealed that variation across methodologies of learned helplessness studies did not influence the magnitude of helplessness effects. Peterson, Maier, and Seligman (1993) cited these results as evidence suggesting that helplessness displayed by groups outside of the laboratory may simply be due to increased exposure to uncontrollability in life situations, rather than differential sensitivity to helplessness effects.

Recently, researchers have investigated the associations between failure in life circumstances and learned helplessness. Baum, Fleming, and Reddy (1986) investigated the association between career failure and helplessness. Results demonstrated that as length of involuntary unemployment increased, individuals demonstrated greater problem-solving deficits on experimental tasks.

Several studies have provided support for the association between academic failure and the development of helplessness (Johnson, 1981; Peterson & Barrett, 1987). Johnson's (1981) study investigating helplessness among three groups of students demonstrated an association between all three of the primary components of learned helplessness and academic performance. Specifically, students classified as chronic failers were more likely than either average students or chronic failers enrolled in remedial classes to have a history of bad life events, expectations that they would not be able to succeed despite their efforts, and to exhibit lack of effort than students within the other two groups. Peterson and Barrett's (1987) study further demonstrated that a characteristic pessimistic attributional style, which refers to the cognitive manifestation of helplessness among humans, predicted lower achievement among college freshmen. In combination, results of these studies suggest that development of learned helplessness interferes with the academic performance of students, despite actual capabilities possessed by these individuals.

Peterson, Maier, and Seligman (1993) provided a clear rationale for investigating academic achievement within the learned helplessness theoretical framework. Due to the importance of effort and clear representation of failure in the form of wrong answers, "school is a particularly close approximation to the laboratory setting in which learned helplessness was first described" (Peterson, Maier, & Seligman, 1993, p. 251).

As discussed previously, minority individuals may be at an overall greater risk for being exposed to a number of uncontrollable sociocultural factors, such as racism, discrimination, and deprivation than non-minority individuals. As a result, such individuals may be more susceptible to developing learned helplessness deficits than non-

minority individuals. Support for this theory may be found in studies regarding acculturation and identity development, in that greater levels of behavioral passivity have been observed among minority individuals as compared to non-minorities with regard to these issues. Specifically, a strong preference for assimilation (adaptation of minority culture to the dominant culture) versus integration (maintenance of ethnic ties without rejecting the values and traditions of the majority culture) has been found among Native Americans (Berry & Annis, 1974). In addition, Streitmatter (1988) found that minority group participants were more foreclosed about their identity (i.e., committed to a particular identity without exploration, usually based on parental values), as compared to Caucasian participants.

Some researchers have suggested that repeated exposure of minority individuals to various uncontrollable sociocultural factors may also account for differences observed across cultural groups with regard to academic performance. Specifically, development of learned helplessness among minority individuals resulting from environmental noncontingency may interfere with their academic performance (Seligman, 1975; Sue, 1977). Results of Weisz's (1981) study provided support for this theory. Specifically, African American children were found to exhibit greater disruption in problem-solving in response to failure than white children.

In addition to the impact of exposure to noncontingency on development of helplessness among minority students within life situations in general, uncontrollable situations within the academic environment may influence the development of helplessness among minority students as well. As an example, Powell (1990) described the manner in which stereotypical expectations of educators regarding lowered

performance among African American individuals in particular subject areas may lead to insufficient academic training in these areas. As a result, academic failures may be more likely to occur, and students may come to believe that their responses, or the amount of effort they expend, are unrelated to outcome. Indeed, Dweck and Reppucci (1973) demonstrated that students performed worse for teachers who had initially given them only unsolvable problems, even when the problems were identical to those they had solved with the *solvable* teachers. Hence, these results suggest that messages provided to students by educators regarding their classroom performance influences future performance. Related to this issue, feedback that is based on stereotypical expectations may actually negatively influence, rather than accurately reflect, student performance in a particular classroom setting.

Summary

In general, the research investigating the relationship between racial status and academic performance has indicated that there are performance differences among different racial groups. In most of these studies, Caucasian students have been found to exhibit higher levels of academic performance, lower levels of early school dropout, and higher levels of occupational expectancies than minority group individuals (Lay and Wakstien, 1985; Steinberg, et al., 1992; Sue & Okazaki, 1990). Level of academic performance is of particular concern among Native Americans. As a group, Native Americans have historically exhibited lower levels of academic achievement, higher dropout rates, and lower levels of occupational expectancies than any other minority group (Kerbo, 1981; Sue & Sue, 1990; U. S. Bureau of the Census, 1995).

Sue and Sue (1990) review the two opposing explanations that have been used to account for lower performance levels displayed by minority individuals across a variety of situations, as compared to non-minorities. Specifically, the *riffraff* theory ascribes difficulties faced by minorities to personal failures and inadequacies. Alternatively, the *blocked-opportunity* theory views discrimination and other environmental forces as factors that may prevent minority individuals from achieving their goals and advancing within society.

From a learned helplessness perspective, blocked opportunities may be viewed as examples of behavior-outcome non-contingency that are commonly experienced by minority group members. As a result of repeated exposure to non-contingency within their environments, minority group members may be placed at greater risk for developing helplessness deficits.

Dweck and Reppucci's (1973) study provided support for the notion that children are able to discriminate helplessness. In other words, although individuals may display helplessness in a particular classroom, they may perform well with other teachers or at other tasks. However, Seligman (1975) discusses the more detrimental development of a helplessness "learning set (p. 154)." Specifically, through exposure to behavior-outcome noncontingency, participants who learned that their responses did not produce a solution displayed greater problem-solving deficits than participants with either no problem-solving experience or experience in effective problem-solving (O'Brien, 1967). Related to this issue, Seligman (1975) stated that "When a child fails in school, he may be forming the higher-order cognition that his responses are ineffective in general (p. 155)." From this perspective, there is a greater likelihood that helplessness cognitions will be

generalized from one setting to another for minority individuals who experience behavior-outcome non-contingency in a variety of areas within their lives.

Indeed, minority individuals in general are often exposed to a number of sociocultural factors which represent chronic, uncontrollable stressors, or environmental non-contingency. These factors are comprised of both cultural and class variables. It is somewhat difficult to tease apart the effects of cultural and class variables upon development of helplessness, in that they are not entirely independent. Specifically, minority-group members display lower levels of income than non-minority individuals overall (U. S. Bureau of the Census, 1995). As a result, minority individuals are more likely to experience lifestyle characteristics associated with poverty. Based on the interactional effects of cultural and class variables, it is conceivable that minority status may serve as a marker rather than a key variable in predicting the development of helplessness.

Overall, the theory of learned helplessness would seem to provide a conceptual framework for understanding poor academic performance among minority individuals. However, some studies have suggested that the traditional theory of learned helplessness may be inadequate in accounting for lower levels of academic performance among minority individuals. Specifically, results of these studies suggest that minority students ascribing to a characteristic pessimistic attributional style actually obtained higher levels of academic achievement, whereas non-minority individuals ascribing to such a pessimistic attributional style have traditionally obtained lower levels of academic achievement (Chaney, 2001; Robertson, 1998). Researchers have further suggested that conceptualizations of achievement within various cultural contexts may prohibit

application of learned helplessness theory as a full explanation of differences in patterns of achievement across various cultural groups (Duda & Allison, 1989; Oetting & Beauvais, 1991).

Present Study

Based on the preceding review of the literature, the present study was designed to establish a framework for understanding the manner in which learned helplessness impacts performance of Native Americans on cognitive tasks, as compared to a Caucasian sample. Although a number of researchers have attempted to account for performance differences across ethnic groups with regard to academic achievement, these studies have been based exclusively on self-report measures and correlational data.

The present study examined the impact of experimentally induced learned helplessness on problem-solving task performance in Native American college students, compared to a Caucasian sample matched for age and socioeconomic status. Because of the link between learned helplessness and depression that has been demonstrated in the literature, and because ethnic identity and perceived deprivation have been shown to influence academic performance, these variables were examined as potential covariates in the primary analyses.

The rationale for the study was based on two primary issues. First, minority individuals consistently experience higher levels of exposure to chronic, uncontrollable stressors associated with race, such as acculturative stress, racism, discrimination, and socioeconomic deprivation (Clark, 1964; Spencer, Kim, & Marshall, 1987; & Sue, 1977). Although individual perceptions regarding ethnic identity and deprivation may differ greatly within a particular ethnic group, these sociocultural factors are experienced at greater overall levels by minority individuals as compared to majority group members.

A second and related issue upon which the present study was based, relates to the anticipated effect of repeated exposure to lack of control over the outcomes of life situations. Research has consistently demonstrated that behavior-outcome non-contingency results in increased susceptibility to developing learned helplessness deficits (Peterson & Barrett, 1987; Peterson, Maier, & Seligman, 1993; Seligman & Schulman, 1986). Based on this association between non-contingency and helplessness, it would seem logical to anticipate that minority individuals, having potentially experienced higher levels of uncontrollable outcomes in their life experiences than non-minority individuals overall, would be more susceptible to developing learned helplessness deficits following exposure to experimentally-induced behavior-outcome non-contingency.

Method

Participants

Two groups of participants, matched for age and socioeconomic status (SES) were recruited from undergraduate classes at a state university in the southwestern United States. Participants were provided with the option of obtaining extra course credit, or having their names entered into a $50.00 raffle following completion of the experiment. The first group of participants in the study consisted of young adults who were self-identified as Native American; the second group of participants identified themselves as Caucasian. Participants (22 male, 46 female) ranged in age from 18 to 22 years, with a mean of 19.5 years. Socioeconomic status was determined according to the Hollingshead (1957) Two Factor Index of Social Position scale. Scores on the measure ranged from 1 to 5, with a score of 1 indicating the highest possible ranking, and a score of 5 indicating the lowest possible ranking for social class. As indicated by self-report, participants were from a diverse range of socioeconomic backgrounds, with scores ranging from 1 to 5 ($M = 2.74$, $SD = 1.02$).

Procedure

Following recruitment, participants were contacted by telephone in order to schedule individual appointments for participation in the study. Each session was comprised of two components. First, participants completed survey forms comprised of a demographic questionnaire and measures of depression, ethnic identity, perceived deprivation, and attributional style.

The second component of the study involved participation in an experimental task. Prior to their arrival, participants were randomly assigned to one of two treatment conditions (i.e., solvable or unsolvable feedback) on a computerized concept-formation task. The experimenters were uninformed regarding condition assignment.

The experimental phase of the procedure involved five phases: (1) Pre-treatment Phase - subjects completed mood state, performance expectancy, and task attribution measures; (2) Treatment Phase - subjects were administered a computerized concept-formation task on which they received either solvable or unsolvable performance feedback; (3) Post-treatment Phase - subjects again completed mood, expectancy, and task attribution measures; (4) Performance Phase - subjects performed a computerized anagram-solving task; and (5) Debriefing Phase - participants in both conditions were informed of the experimental manipulation following the experimental session. Total time for each individual session was approximately 90 minutes.

Measures

Background Questionnaire. The background questionnaire assessed demographic information and socioeconomic status (SES). SES was assessed with the Two Factor Index of Social Position (Hollingshead, 1957). The range of scores for SES on a continuum are from 1 (high SES) to 5 (low SES). Therefore, lower income brackets were indicated by higher scores.

Multigroup Ethnic Identity Measure. A modified version of the Multi-Group Ethnic Identity Measure (Phinney, 1992) was administered in order to assess participants' ethnic identity developmental level. Cultural identity as independent from racial status was obtained from participants' responses to an open-ended question regarding self-

identification of ethnic identity. The 24-item self-report scale assessed participants' sense of belonging to their self-identified ethnic group, their attitudes toward the group, their ethnic behaviors, and their understanding of the meaning of their ethnicity according to a 4-point Likert scale. Composite ethnic identity scores were obtained by reversing negatively worded items, summing across items, and obtaining the mean; scores ranged from 4 (indicating high ethnic identity) to 1 (indicating low ethnic identity). Reported reliability coefficients for the scale were .81 for the high school sample and .90 for the college sample (Phinney, 1992).

Perceived Deprivation Scale (PDS). The PDS is a scale that was derived from the Prolonged Deprivation Scale developed in India by Misra and Tripathi (1978). The self-report instrument assesses deprivation across 15 aspects of the environment. The scale was adapted by using only the identified clusters of the instrument. The scale assesses participants' perceived levels of deprivation in the following areas: housing, food, clothing, money, health care, transportation, family/parental support, peer support, religious support, teacher support, extra-curricular activity, quality of education, and quality of neighborhood. Level of deprivation in each of these areas was assessed according to a six-point Likert scale, with higher scores indicating higher levels of perceived deprivation. Composite deprivation scores were obtained by summing across items. Reliability coefficients previously reported for the scale were .91 for split-half reliability and .92 for internal consistency (Chaney, 2001).

Inventory to Diagnose Depression (IDD). The IDD (Zimmerman & Coryell, 1987) is a self-report instrument used to assess symptoms of major depressive disorder. Although originally designed for earlier DSM-III and DSM-III-R diagnostic nosology

(APA, 1980, 1987), the version utilized in the present study is consistent with current DSM-IV major depression criteria (APA, 1994). Each of the 18 diagnostic items on the IDD is a group of five statements, arranged in order of increasing severity, that assesses the severity of a single major depression symptom. Similar to other self-report measures of depression, a severity index of depressive symptomatology can be obtained by summing the items. A scoring algorithm also provides for making binary decisions regarding the presence of symptoms necessary for a diagnosis of major depressive disorder. The IDD has been shown to be a reliable and valid measure of depression (Zimmerman & Coryell, 1987) and has demonstrated good diagnostic concordance with both semi-structured interviews and clinician ratings of major depression (Zimmerman & Coryell, 1994; Zimmerman, Coryell, Corenthal, & Wilson, 1986). Because depression has been shown to influence anagram performance in previous studies, IDD scores were examined as a potential covariate in the primary analyses.

Multiple Affect Adjective Checklist (MAACL). The MAACL (Zuckerman & Lubin, 1965) is a 132-item checklist that assesses transient mood states. The MAACL contains words describing three different mood states: anxiety (e.g., afraid), depression (e.g., wilted), and hostility (e.g., angry). Respondents are given the instructions: "Please check the words that you feel apply to you right now, at this moment." Mood adjective items are scored as 1 (present) or 0 (absent); some items contain positive mood adjectives, which are scored if not endorsed. Items are summed and divided by the number of available words for each mood state (i.e., 21 for anxiety; 40 for depression; 28 for hostility). These scores represent the respondent's level of transient anxiety, depression, and hostility. Scores on the three MAACL mood states were utilized to

examine the effectiveness of the experimental manipulation (i.e., solvable versus unsolvable feedback) on participants' moods. The MAACL has been shown to be sensitive to transient mood changes in previous studies utilizing experimental induction procedures (e.g., Cairns & Norton, 1988; Nagata & Trierweiler, 1988).

Visual Analog Scale (VAS). The VAS measure employed in the present study consisted of a single-item, 10 centimeter line that asked participants to indicate the extent to which they expect to succeed on an upcoming computer task. Participants were instructed to, "Place an 'X' on the line that indicates how you expect to perform on the task." The scale ranged from 1 (much worse than most people) to 10 (much better than most people). VAS performance ratings were used to check the effects of the experimental manipulation on outcome expectancies as a function of receiving solvable versus unsolvable feedback on the computerized task (e.g., Benson & Kennelly, 1976).

Task Attribution Ratings (ATTRIB). A single-item question asked participants to provide an attributional rating for their performance on the experimental computer task. Participants were asked, "Do you think that your level of success on the computer task (will be/was) due to something about you or due to other circumstances?" The format of the ATTRIB scale was similar to items on the Attributional Style Questionnaire (Peterson et al., 1982). Responses could range from 1 (totally due to other circumstances) to 7 (totally due to me). Higher ATTRIB scores reflect more internal attributions for task performance. ATTRIB scores were utilized to examine the effects of the experimental manipulation. Previous studies have indicated that internal attributions tend to increase following response-contingent success on experimental tasks; decreases are seen in

response to failure or non-contingent aversive experimental conditions (Benson & Kennelly, 1976; Cohen, Dowling, Bishop, & Maney, 1985).

Experimental Task

The experimental manipulation procedure utilized in the present study was a computerized version of a standard concept-formation task (e.g., Levine, 1971), similar to the task originally used by Hiroto and Seligman (1975) and others (e.g., Benson & Kennelly, 1976). Participants were seated at a computer terminal in a private room and were given the following standardized instructions:

> In this experiment, you will be presented with several problems. Each problem consists of a series of displays like the one in the bottom right-hand corner of the screen. Each display has two patterns: one on top and one on bottom. Each pattern contains a letter A and a letter T. You will also notice that one letter is surrounded by a square and the other by a circle, and that one background is red and the other blue. Every display will be like this one except that the letters, the surrounding shapes, and the background colors will be combined in different ways.
>
> One of the two patterns, either the top one or the bottom one, has been chosen to be correct. For each display I want you to indicate which of these two [top or bottom] you think is correct and I'll tell you whether you are right or wrong. Then, go on to the next display. Again, you make a choice, and again I'll tell you whether you are right or wrong.
>
> In this way you can learn the reason for my saying 'right' or 'wrong'. The reason may be because of the position of the letter, the surrounding shape, or the

background color. The object for you is to figure the pattern out as fast as possible so that you can choose correctly as often as possible. Press the keyboard letter T if you think the top pattern is correct, or press the keyboard letter B if you think the bottom pattern is correct.

Participants were given examples of how to perform the task. Then, they were presented with a series of 40 stimulus patterns on the computer screen; the patterns were grouped into four sets of problems, with 10 trials for each problem. At the end of each tenth trial, the stimulus dimension (e.g., the letter A) associated with a correct response changed automatically, requiring participants to determine the new correct stimulus dimension (e.g., the color blue).

As part of the standardized instructions, all participants were given the perception that the task was solvable and that determining the correct dimension (i.e., letter, color, shape) of the stimulus pattern was attainable. However, only approximately half the participants received solvable problems with response-contingent correct and incorrect feedback on their performance (i.e., solvable condition). In other words, participants in the solvable feedback condition were given feedback that allowed them to eventually ascertain the correct stimulus pattern. Participants in the unsolvable feedback condition received unsolvable problems with response-non-contingent correct and incorrect feedback on their performance. Participants in this condition were unable to determine the correct stimulus pattern due to random performance feedback and, subsequently, unable to correctly identify any of the patterns across the four blocks of 10 trials.

Anagram performance. The computerized anagram-solving task used in the present study contains 20 anagrams, consisting of five letters each. All anagrams were

presented in the same scrambled order (i.e., 3-4-2-5-1) and are solvable using a 5-3-1-2-4 solution sequence (e.g., Alloy, Peterson, Abramson, & Seligman, 1984; Benson & Kennelly, 1976; Hiroto & Seligman, 1975). Participants were given the following standardized instructions to complete the anagram task:

> You will be asked to solve some anagrams. Anagrams are words with the letters scrambled. The problem for you is to unscramble the letters so that they form a word. When you have found the word, type it onto the computer keyboard. Notice that there may be a pattern or principle by which to solve the anagrams. But, that's up to you to figure out.
>
> You will have 100 seconds to solve each anagram before the next one is presented. If you guess incorrectly, you may try again and again until the time limit is up. If you want to make a correction, use the backspace key.

Participants were then presented with 20 anagrams on the computer screen; they were given 100 seconds in which to solve each anagram. The primary outcome measure in the present study was the number of anagrams incorrectly identified (i.e., not solved in <100 seconds) out of the 20 trials on the anagram-solving task (e.g., Alloy et al., 1984).

Hypotheses

The purpose of the present study was to examine the impact of experimentally induced learned helplessness on problem-solving task performance in Native American college students, compared to an age-matched Caucasian sample. Due to the link between behavior-outcome noncontingency and learned helplessness, it was anticipated that participants who received noncontingent feedback would exhibit greater deficits in problem-solving performance than those who received contingent feedback. Further, it was anticipated that Native American students, having potentially experienced higher levels of uncontrollable outcomes in their lives than non-minority individuals, would be more susceptible to developing learned helplessness deficits following exposure to experimentally-induced behavior-outcome non-contingency.

Specifically, there were two primary hypotheses of the present study. First, it was hypothesized that there would be a significant main effect of condition on anagram performance for both Caucasian and Native American groups, with noncontingent experimental feedback resulting in a greater number of cognitive errors on an anagram-solving task. Second, it was hypothesized that there would be a significant group by condition effect on anagram performance, such that Native American participants were expected to make more errors than Caucasian participants on the anagram-solving task after receiving noncontingent experimental feedback (See Appendix C).

Results

Preliminary Analyses

As proposed, preliminary analyses were performed to test for the effects of random assignment of participants to solvable or unsolvable treatment conditions on the concept formation task prior to manipulation. A 2 x 2 (Racial Group x Treatment Condition) MANOVA revealed no group, condition, or group by condition effects on pre-treatment levels of MAACL depression, anxiety, or hostility, VAS performance expectancy ratings, or task ATTRIB ratings (all p values > .05).

To determine potential covariates, zero-order correlations were also performed between anagram task performance and depression, ethnic identity, and perceived deprivation. Only perceived deprivation was significantly correlated with anagram performance, r (68) = .27, p = .03. Perceived deprivation was subsequently used as a covariate in the primary analyses.

Manipulation Checks

A 2 x 2 x 2 (Racial Group x Condition x Time) repeated measures MANOVA was conducted to examine the effects of experimental manipulation on MAACL mood states, VAS performance expectancy ratings, and task ATTRIB ratings. The experimental manipulation was partially effective in influencing these variables. The overall condition by time effect was not significant [F(5, 59) = 1.12, p = .32]. However, a decision was made to err on the side of detecting significant differences. Univariate tests revealed significant condition by time effects for MAACL hostility ratings, [F(1, 59)

= 5.85, p = .01] and task ATTRIB ratings [$F(1, 59) = 4.08$, p = .05]. Also, univariate tests revealed no significant overall effect of time on MAACL hostility [$F(1, 32) = 1.71$, p = .20] and ATTRIB task attribution ratings [$F(1, 32) = 1.29$, p = .27] within the contingent feedback condition. However, there was a significant effect of time on MAACL hostility ratings [$F(1, 33) = 18.40$, p = .01] within the noncontingent feedback condition, and the effect of time on ATTRIB task attribution ratings within the noncontingent condition approached significance [$F(1, 32) = 3.05$, p = .09]. An examination of the means revealed that MAACL hostility ratings increased from Time 1 to Time 2 (M = 7.28 and M = 9.03, respectively), and ATTRIB task attributions decreased from Time 1 to Time 2 (M = 5.26 and M = 4.69, respectively) following noncontingent feedback on the concept-formation task.

Further, to more closely investigate potential differences between racial groups, 2 x 2 (Condition x Time) repeated measures ANOVAs were conducted separately for Caucasian and Native American participants to examine the effects of experimental manipulation on MAACL mood states, VAS performance expectancy ratings, and task ATTRIB ratings. There was a significant condition by time effect within the Caucasian sample for MAACL hostility ratings [$F(1, 32) = 5.42$, p = .03]. Also, for Caucasian participants, the condition by time effects approached significance for MAACL depression [$F(1, 32) = 3.16$, p = .09] and ATTRIB task attribution ratings [$F(1, 32)$ = 3.78, p = .06]. However, no significant condition by time effects were observed in the Native American sample. Thus, the experimental effects on mood and attributions were accounted for by observed pre-post changes exclusively in the Caucasian group.

Primary Analyses

A 2 x 2 (Racial Group x Condition) analysis of covariance (ANCOVA) was performed to test for differences in anagram performance, controlling for perceived deprivation. The group by condition effect approached significance [$F(1, 67), = 2.78, p =$ .10]. An examination of means revealed a trend in the predicted direction for Caucasian participants. Specifically, Caucasian participants in the noncontingent feedback condition committed more errors on the anagram task ($M = 6.33$) than their Caucasian cohorts in the contingent feedback condition ($M = 4.13$); however, this difference was not significant ($p = .19$). Conversely, Native American participants in the noncontingent feedback condition committed essentially the same number of anagram errors ($M = 3.65$) as Native American participants in the contingent feedback condition ($M = 3.77$).

Exploratory Analyses

Due to the observed trend in the predicted direction for Caucasian participants, (i.e., more anagram errors in the noncontingent versus contingent feedback condition), exploratory follow-up analyses were conducted to examine simple effects on anagram performance. Two separate one-way ANCOVAs were conducted to examine race effects on anagram performance for contingent and noncontingent feedback conditions. Results revealed that Caucasian participants in the noncontingent condition committed significantly more anagram errors ($M = 6.59$) than their Native American counterparts in the same condition ($M = 3.38$), after controlling for perceived deprivation [$F(1, 34) =$ 5.84, $p = .02$]. Within the contingent feedback condition, the two groups did not differ with regard to anagram performance [$F(1, 32) = .07, p = .80$] (see Figure 2). Similar to

the observed experimental effects on mood and attributions, the effects of experimental noncontingent feedback were observed only for the Caucasian participants.

Discussion

The purpose of the present study was to examine the impact of experimentally-induced learned helplessness on problem solving task performance in Native American college students, compared to a Caucasian sample matched for age, gender, and socioeconomic status. Previous research has indicated that repeated exposure to uncontrollable outcomes predicts the development of learned helplessness deficits (Peterson & Barrett, 1987; Peterson, Maier, & Seligman, 1993; Seligman & Schulman, 1986). Further, racial minority group members are thought to experience consistently high levels of exposure to chronic, uncontrollable stressors associated with minority group status, such as acculturation stress, racism, discrimination, and socioeconomic deprivation (Clark, 1964; Spencer, Kim, & Marshall, 1987; & Sue, 1977). It was anticipated that both Native American and Caucasian participants would exhibit deficits in problem-solving performance following exposure to behavior-outcome noncontingency. However, it was predicted that Native American participants would demonstrate greater susceptibility to the effects of experimentally-induced learned helplessness than their Caucasian cohorts, as measured by performance on an anagram solving task.

Based on a comparison of pre- and post-test measures, there was partial evidence to indicate that the experimental manipulation was effective in inducing transient moods and modifying performance attributions. Specifically, participants' ratings of hostility increased, whereas internal attribution ratings decreased for those who were provided

with noncontingent feedback. Results are consistent with previous research indicating that transient negative emotions increase and internal attributions typically decrease following failure situations (Bradley, 1978; Chaney, et al., 1999; Jain & Mal, 1984; Miller, 1976; Stevens & Jones, 1976). No significant differences were found between pre-and post-test subjective ratings of mood states, performance expectancies, or internal attributions for participants in the contingent feedback condition.

It is also interesting to note that only Caucasian participants' hostility ratings increased following exposure to noncontingent feedback. Internal attributions decreased only for the Caucasian sample as well, although this difference was not significant. Within the Native American sample, participants exhibited no significant change in mood states, performance expectancies, or internal attributions in response to noncontingent feedback. Results suggest that the effect of experimental manipulation (i.e., noncontingent feedback) in inducing mood states and attributions was accounted for by changes observed exclusively in the Caucasian sample. Changes in mood states and attributions following noncontingent experimental feedback were not observed among Native American participants.

Perceived deprivation, but not depression, demonstrated a significant relationship with poorer anagram performance. Although more research is needed to examine more precisely the role of this cognitive appraisal variable, results provide evidence that subjective appraisals of environmental deprivation are useful in examining cognitive deficits related to learned helplessness (Chaney, 2001). Due to its correlation with anagram performance, perceived deprivation was controlled within the primary analysis.

The primary hypothesis of the present study was only partially supported. No significant effect for experimental condition was observed, although the hypothesized race by condition effect approached significance. Exploratory analyses revealed a condition effect trend in the predicted direction for Caucasian participants. Specifically, within the noncontingent feedback condition, Caucasian participants committed a higher number of errors on the anagram-solving task than their Caucasian cohorts who received contingent feedback. Within the Native American sample, anagram performance did not vary as a function of experimental condition. Further, Caucasian participants in the noncontingent condition committed significantly more anagram errors than their Native American counterparts in the same condition.

Thus, Caucasian participants in the study demonstrated a tendency toward increased problem-solving deficits in response to noncontingent feedback, consistent with numerous studies in the learned helplessness literature (Baum, Fleming, & Reddy, 1986; Hiroto, 1974; Hiroto & Seligman, 1975; Johnson, 1981; Peterson & Barrett, 1987). However, Native American participants did not exhibit poorer levels of problem-solving performance in response to noncontingent feedback, as the model would predict. In fact, an examination of the means revealed that Native American participants' performance was nearly identical regardless of experimental feedback condition.

Although the anticipated main effect of condition within the Caucasian sample did not reach statistical significance, low observed power in the analyses may have accounted for the lack of significant results. Similarly, the observed race by condition effect demonstrated a statistical trend, but did not reach statistical significance. There is evidence that with increased power, these trends would likely have reached statistical

significance. To illustrate, the two groups (Caucasian and Native) did not differ significantly under conditions of contingent feedback, but simple effects analyses revealed a significant effect for racial group on anagram performance within the noncontingent feedback condition. Thus, the difference in anagram performance for Caucasian participants in the contingent versus the noncontingent condition should have also been significant, but low power prevented this trend from reaching statistical significance. Previous research has indicated that it is particularly difficult to achieve the level of statistical power necessary to detect significant effects that are interactive in nature and that simple effects analyses may be more appropriate if observed results are in the predicted direction (McClelland & Judd, 1993).

Although increased power in the analysis may have resulted in the detection of a significant group by condition effect on anagram performance, increased power would not have changed the finding that Native participants' performance on the anagram task was independent of experimental condition. In other words, a significant group by condition effect still would have been due to the significantly poorer performance of Caucasian participants, relative to Native participants, following exposure to noncontingent experimental feedback. Increased power would not have impacted the observed finding that the problem-solving performance of Native participants was the same regardless of whether they received contingent or noncontingent experimental feedback.

The absence of a condition effect for the Native American group suggests that Native participants did not respond to environmental feedback in the way that Caucasian participants did. Although speculative, the present results may reflect cultural differences

between Caucasian and Native people with regard to definitions of success and failure and the manner in which they respond to objective feedback from the environment. To illustrate, Duda and colleagues (Duda, 1986; Duda & Allison, 1989; 1990) have pointed out that definitions of success and failure are largely determined by the values of a particular culture. For example, these authors found that Native individuals were more likely than Caucasians to define success/failure according to self-referenced conceptions of achievement (i.e., success means doing better than I did before). Caucasian individuals were more likely to emphasize objective criterion (i.e., success means doing better than others).

Further, because of potential cultural variations in defining achievement, Duda and colleagues have suggested that traditional cognitive models of helplessness (e.g., attributional style) also may not apply across cultures (Duda & Allison, 1989). For example, these authors found that whereas both Native and Caucasian individuals make internal attributions for success, Caucasian participants tended to emphasize personal ability and Native participants overwhelmingly emphasized personal effort. Thus for success, Caucasian individuals appear to compare their performance to external definitions of achievement (i.e., my ability compared to others' ability) and Native individuals are more inclined to compare their performance to internal standards of achievement (i.e., my effort compared to my previous effort). These differences in causal attributions could potentially influence the degree to which individuals attend to or do not attend to environmental feedback on performance. Subsequently, the extent to which performance feedback affects subsequent performance could also be differentially influenced—as seen in the present study.

Although causal attributions were not assessed in the present study, ongoing research in our lab similar to the present study appears to support this interpretation. In a study examining causal attributions, learned helplessness induction, and anagram performance, Hicks and Chaney (2004) found that Caucasian college students classified as high in pessimistic attributional style made more anagram errors after receiving non-contingent experimental feedback. Similar to findings in the present study, Native American participants' performance was unaffected by performance feedback—even for those classified as high in pessimistic attributional style. Consistent with attributional models of learned helplessness (e.g., Betancourt & Weiner, 1982; Weiner, 1974; 1979; 1985), Caucasian participants in that study showed cognitive deficits in response to non-contingency, especially when they endorsed pessimistic causal attributions. Contrary to theory, however, Native participants performed equally well regardless of performance feedback or causal attributions. Thus, results of the present study and Hicks and Chaney (2004) indicate that both behavioral and cognitive models of helplessness produce dramatically different results in Native populations.

Limitations and Implications

In addition to the statistical power issue previously discussed, it is important to view results of the present study within the context of three other closely related methodological limitations. First, generalization of our findings about Native American participants should be done with some caution. Participants were recruited from only one geographical location, and are not necessarily representative of Native American individuals from other geographical areas or types of residence (e.g., reservation). Similarly, more than 600 distinct Native American tribes are recognized at the federal and state levels within the United States. Each tribe has distinct cultural values and practices that may impact how individuals perceive their environment, as well as how these perceptions ultimately influence their behavior. Because variations in tribal affiliation or cultural practices were not examined in the present study, caution should be taken in making "Pan-Indian" (McDonald, 1998; p. 14) assertions regarding the data.

Finally, the highly selective nature of a Native college student sample represents another potential limitation. As a group, Native Americans are the most highly underrepresented racial minority group in higher education settings (Pewardy & Frey, 2004). Because Native American college students represent such a unique cross-section of Native individuals, findings in the present study may only apply to Native American individuals who are attending college. One consideration may be that Native American individuals attending college may be more acculturated into mainstream majority culture compared to Native citizens in general. However, if the present sample comprised only

highly acculturated Native Americans, then it would be reasonable to expect that the Native participants should have responded to the experimental induction in a manner similar to that seen in the Caucasian sample - and this was not the case.

Notwithstanding these limitations, results of the present study suggest that traditional models of learned helplessness may not accurately portray achievement motivation in Native Americans. Consistent with traditional learning conceptualizations, Caucasian participants exhibited a greater susceptibility to the effects of experimentally induced learned helplessness consistent with traditional models; there was no evidence to indicate that Native American participants' performance was affected by receiving external performance feedback from the environment. This would seem to indicate that problem-solving performance among Native Americans has more to do with internal than external motivating factors. Whereas the performance of Caucasian individuals may be more influenced by feedback determined according to objective standards defined by society at large (i.e., external objectives), Native Americans might be influenced more by comparisons with an internal standard. Thus, although both sets of norms are culturally determined, they emphasize different features of performance feedback.

It may also be the case that because mainstream cultural values and styles of learning are so far removed from the Native American experience, they offer little in the way of informative feedback for learning. Subsequently, Native individuals may come to disregard objective environmental feedback in favor of their own internal performance standards, which they find more applicable. Although speculative, this interpretation could provide insights into ways of promoting Native American achievement motivation in areas such as education. Traditional methods of setting up competitive environments

and external performance standards may not be as successful as other methods that focus on competition with one's own standards that emphasize effort.

The present study adds to a growing body of literature that contradicts the traditional model of learned helplessness when it is applied to academic and problem-solving performance among minority populations. Results suggest that it may be necessary to reconsider traditional conceptualizations of learned helplessness, in order to develop a more comprehensive understanding of Native American culture-specific influences that impact the development of causal attributions and behavioral styles of responding to the environment. Future studies should attempt to account for specific cultural variables, which may serve to moderate and/or mediate the impact of learned helplessness on problem-solving performance among Native American individuals.

References

Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 87, 49-74.

Alloy, L. G., Peterson, C., Abramson, L. Y., & Seligman, M. E. P. (1984). Attributional style and the generality of learned helplessness. Journal of Personality and Social Psychology, 46, 681-687.

American Council on Education. (2000). College enrollment. In Deborah J. Wilds (Ed.), Minorities in Higher Education 1999-2000: Seventeenth Annual Report (pp. 17-22). Washington, DC: American Council on Education.

Baum, A., Fleming, R., & Reddy, D. M. (1986). Unemployment stress: Loss of control, reactance, and learned helplessness. Social Science and Medicine, 22, 509-516.

Benson, J. S., & Kennelly, K. J. (1976). Learned helplessness: The result of uncontrollable reinforcements or uncontrollable aversive stimuli? Journal of Personality and Social Psychology, 34, 138-145.

Berry, J., & Annis, R. (1974). Acculturative stress: The role of ecology, culture and differentiation. Journal of Cross-Cultural Psychology, 5, (4), 382-406.

Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. International Migration Review, 21, (3), 491-511.

Betancourt, H., & Weiner, B. (1982). Attributes for achievement-related events, expectancy, and sentiments: A study of success and failure in Chili and the U.S. Journal of Cross-Cultural Psychology, 13, 362-374.

Bradley, G. W. (1978). Self-serving biases in the attribution process: A re-examination of fact or fiction question. Journal of Personality and Social Psychology, 36, 56-71.

Brod, R., & McQuiston, J. (1983). American Indian adult education and literacy: The first national survey. Journal of American Indian Education, 22, (2), 1-16.

Cairns, R. B., & Cairns, B. D. (1989). Early school dropout: Configurations and determinants. Child Development, 60, 1437-1452.

Cairns, S. L., & Norton, G. R. (1988). Induction and reversal of depression, anxiety, and hostility. Journal of Clinical Psychology, 44 (3), 416-424.

Calliste, A. M. (1982). Educational and occupational expectations of high school students. Multiculturalism Journal, 5 (3), 365-374.

Chaney, J. (2001). Attributional style, depression, and academic achievement in Native American students. In D. McNeil & C. Porter (Chairs), Depression, achievement, and self-esteem in Native Americans: Science, culture, and spirituality. Symposium presented at the meeting of the American Psychological Association, San Francisco.

Chaney, J. M., Mullins, L. L., Uretsky, D. L., Pace, T. M., Werden, D., & Hartman, V. L. (1999). An experimental examination of learned helplessness in older adolescents and young adults with long-standing asthma. Journal of Pediatric Psychology, 24 (3), 259-270.

Clark, K. B. (1965). Problems of social power and social change: A relevant social psychology. Journal of Social Issues, 21 (3), 4-20.

Cohen, J. L., Dowling, N., Bishop, G., & Maney, W. J. (1985). Causal attributions: Effects of self-focused attentiveness and self-esteem feedback. Personality & Social Psychology Bulletin, 11 (4), 369-378.

Duda, J. L. (1986). A cross-cultural analysis of achievement motivation in sport and the classroom. In L. VanderVelden & J. Humphrey (Eds.), Current Selected Research in the Psychology and Sociology of Sport. NY: AMS Press.

Duda, J. L., & Allison, M. T. (1989). The attributional theory of achievement motivation: Cross-cultural considerations. International Journal of Intercultural Relations, 13, 37-55.

Duda, J. L., & Allison, M. T. (1990). Cross-cultural analysis in exercise and sport psychology: A void in the field. Journal of Sport & Exercise Psychology, 12, 114-131.

Dweck, C. S., & Reppucci, N. D. (1973). Learned helplessness and reinforcement responsibility in children. Journal of Personality and Social Psychology, 25, 109-116.

Fleming, J. (1985). Blacks in college. San Francisco: Jossey-Bass.

Fleming, J. (1986). Standardized test scores and the black college environment. Research Report From the United Negro College Fund, 10, (1), February.

Glass, D. C., & Singer, J. E. (1972). Urban stress: Experiments on noise and social stressors. New York: Academic Press.

Graves, T. (1967). Psychological acculturation in a tri-ethnic community. Southwestern Journal of Anthropology, 23, 337-350.

Helms, J. (1990). Black and White Racial Identity. New York: Greenwood

Press.

Hicks, J., & Chaney, J. (2004). Attributional style as a moderator of the relationship between learned helplessness and cognitive performance: Differential effects across Native American and Caucasian participants. Unpublished manuscript. Oklahoma State University.

Hiroto, D. S. (1974). Locus of control and learned helplessness. Journal of Experimental Psychology, 102, 187-193.

Hiroto, D. S., & Seligman, M. E. P. (1975). Generality of learned helplessness in man. Journal of Personality and Social Psychology, 31, (2), 311-327.

Hollingshead, A. B. (1957). Two Factor Index of Social Position. New Haven, CT.: Author.

Jain, U., & Mal, S. (1984). Effect of prolonged deprivation on attribution of causes of success and failure. The Journal of Social Psychology, 124, 143-149.

Johnson, D. S. (1981). Naturally acquired learned helplessness: The relationship of school failure to achievement behavior, attributions, and self-concept. Journal of Educational Psychology, 73, 174-180.

Kalsner, L. (1992). The influence of developmental and emotional factors on success in college. Higher Education Extension Service Review, 3, (2), 3-13.

Kerbo, H. R. (1981). College achievement among Native Americans: A research note. Social Forces, 59 (4), 1275-1280.

Lay, R., & Wakstein, J. (1985). Race, academic achievement, and self-concept of ability. Research in Higher Education, 22, (1), 43-64.

Levine, M. (1971). Hypothesis theory and nonlearning despite ideal S-R reinforcement contingencies. Psychological Review, 78, 130-140.

Livingston, M., & Stewart, M. A. (1987). Minority students on a white campus: perception is truth. NASPA Journal, 24, (3), 39-49.

Locke, D. C. (1992). Increasing Multicultural Understanding: A comprehensive model. Sage publications.

Loo, C., & Rolison, G. (1986). Alienation of ethnic minority students at a predominantly white university. Journal of Higher Education, 57, (1), 58-77.

Maier, S. F., Albin, R. W., and Testa, T. J. (1973). Failure to learn to escape in rats previously exposed to inescapable shock depends on the nature of the escape response. Journal of Comparative and Physiological Psychology, 85, 581-592.

Mal, S., Jain, U., & Yadav, K. S. (1990). Effects of prolonged deprivation on learned helplessness. Journal of Social Psychology, 130, (2), 191-197.

Marcia, J. E. (1966). Development and validation of ego-identity status. Journal of Personality & Social Psychology, 3 (5), 551-558.

McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderator effects. Psychological Bulletin, 114 (2), 376-390.

McDonald, J. D. (1998). A model for conducting research with American Indian participants. In Council of National Psychological Associations for the Advancement of Ethnic Minority Interests (Eds.), Guidelines for Research in Ethnic Minority Communities, American Psychological Association.

Misra, G., & Tripathi, L. B. (1978). Manual for Prolonged Deprivation Scale. Agra: National Psychological Corporation.

Nagata, D. K., & Trierweiler, S. J. (1988). Exploring the effects of mood checklist pretesting on experimental mood induction procedures. Personality & Social Psychology Bulletin, 14 (1), 125-135.

Nolen-Hoeksema, S. (1992). Children coping with uncontrollable stressors. Applied & Preventive Psychology, 1, 183-189.

Oetting, E. R., & Beauvais, F. (1991). Orthogonal cultural identification theory: The cultural identification of minority adolescents. International Journal of the Addictions, 25, (5A & 6A), 655-685.

Overmier, J. B., & Seligman, M. E. P. (1967). Effects of inescapable shock upon subsequent escape and avoidance learning. Journal of Comparative and Physiological Psychology, 63, (1), 28-33.

Padilla, A. M., Padilla, C., Ketterer, T., & Giacalone, D. (1970). Inescapable shocks and subsequent avoidance conditioning in goldfish (Carrasius auratus). Psychonomic Science, 20, 295-296.

Pavel, D., Sanchez, T., & Machamer, A. (1994). Ethnic fraud, Native peoples, and higher education. Thought and action, 10, 91-100.

Peterson, C., & Barrett, L. C. (1987). Explanatory style and academic performance among university freshman. Journal of Personality and Social Psychology, 53, (3), 603-607.

Peterson, C., Bettes, B. A., & Seligman, M. E. (1985). Depressive symptoms and unprompted causal attributions: Content analysis. Behaviour Research &

Therapy, 23 (4), 379-382.

Peterson, C., Maier, S. F., & Seligman, M. E. P. (1993). Learned helplessness: A theory for the age of personal control. New York: Oxford University Press.

Peterson, C., & Seligman, M. E. P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. Psychological Review, 91, 347-374.

Pewewardy, C. & Frey, B. (2004). American Indian students' perceptions of racial climate, multicultural support services, and ethnic fraud at a predominantly white university. Journal of American Indian Education, 43, 32-60.

Phinney, J. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. Journal of Adolescent Research, 7, (2), 156-176.

Powell, L. (1990). Factors associated with the underrepresentation of African Americans in mathematics and sciences. Journal of Negro Education, 59, 292-298.

Rafferty, Y., & Shinn, M. (1991). The impact of homelessness on children. American Psychologist, 46, (11), 1170-1179.

Redfield, R., Linton, R., & Herskovits, M. J. (1936). Memorandum on the study of acculturation. American Anthropologist, 38, 149-152.

Robertson, J. (1998). Attributional style and academic performance among Native American and Caucasian high school students. Doctoral dissertation. Oklahoma State University.

Rodin, J. (1976). Density, perceived choice, and response to controllable and

uncontrollable outcomes. Journal of Experimental Social Psychology, 12, 564-578.

Rosenhan, D. L., & Seligman, M. E. P. (1989). Abnormal psychology (2nd ed.). New York: Norton.

Seligman, M. E. P. (1975). Helplessness: On depression, development, and death. San Francisco: Freeman.

Seligman, M. E. P., & Maier, S. F. (1967). Failure to escape traumatic shock. Journal of Experimental Psychology, 74, (1), 1-9.

Seligman, M. E. P., & Schulman, P. (1986). Explanatory style as a predictor of productivity and quitting among life insurance sales agents. Journal of Personality and Social Psychology, 50, 832-838.

Spencer, M. B., Kim, S., & Marshall, S. (1987). Double stratification and psychological risk: Adaptational processes and school achievement of Black children. Journal of Negro Education, 56 (1), 77-87.

Steinberg, L., Dornbusch, S. M., & Brown, B. B. (1992). Ethnic differences in adolescent achievement: An ecological perspective. American Psychologist, 47, 723-729.

Streitmatter, J. L. (1988). Ethnicity as a mediating variable of early adolescent identity development, Journal of Adolescence, 11, 335-346.

Sue, S. (1977). Psychological theory and implications for Asian Americans. Personnel and Guidance Journal, 55, 381-389.

Sue, S., & Okazaki, S. (1990). Asian-American educational achievements: A phenomenon in search of an explanation. American Psychologist, 45, (8),

913-920.

Sue, D. W., & Sue, D. (1990). Counseling the culturally different: Theory and practice. New York: A Wiley-Interscience publication.

Suomi, S. J., & Harlow, H. F. (1972). Depressive behavior in young monkeys subjected to vertical chamber confinement. Journal of Comparative and Physiological Psychology, 80, 11-18.

Thomas, E., & Balter, A. (1974). Learned helplessness: Amelioration of symptoms by cholinergic blockade of the septum. Submitted, 1974.

U. S. Bureau of the Census (1995). Statistical Abstract of the United States: 1995 (115th ed.). Washington, DC.: U. S. Government Printing Office.

U. S. Department of Education. (1998). American Indian and Alaska Natives in postsecondary education (NCES 98-291). Washington, DC: U.S. Government Printing Office.

Weiner, B. (1974). Achievement motivation and attribution theory. Morristown, NJ: General Learning Press.

Weiner, B. (1979). A theory of motivation for some classroom experiences. Journal of Educational Psychology, 71, 3-25.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. Psychological Review, 92, (4), 548-573.

Weisz, J. R. (1981). Learned helplessness in black and white children identified by their schools as retarded and nonretarded: Performance deterioration in response to failure. Developmental Psychology, 17, 499-508.

Zimmerman, M., & Coryell, C. (1987). The Inventory to Diagnose Depression (IDD):

A self-report scale to diagnose major depressive disorder. Journal of Consulting and Clinical Psychology, 55, 55-59.

Zimmerman, M., & Coryell, W. (1994). Screening for major depressive disorder in the community: A comparison of measures. Psychological Assessment, 6 (1), 71-74.

Zimmerman, M., Coryell, C., Corenthal, C., & Wilson, S. W. (1986). A self-report scale to diagnose major depressive disorder. Archives of General Psychiatry, 43, 1076-1081.

Zuckerman, M., & Lubin, B. (1965). Manual for the Multiple Affect Adjective Check List. San Diego, Calif.: Educational and Industrial Testing Service.

APPENDIX A

Table I

MAACL Mood States, VAS Performance Expectancy Ratings, and

Task Attributions by Group and Experimental Condition

	Native American Participants Experimental Condition				**Caucasian Participants Experimental Condition**			
	Contingent Feedback		***Non-Contingent Feedback***		***Contingent Feedback***		***Non-Contingent Feedback***	
Measures	Pre M	Post M	Pre M	Post M	Pre M	Post M	Pre M	Post M
MAACL								
Anxiety	4.88	4.71	7.59	8.29	7.19	6.88	7.11	8.33
Depression	10.12	11.00	13.94	15.65	13.63	12.63	14.33	16.72
Hostility	6.47	7.65	7.41	9.76	7.81	8.06	7.44	10.50
VAS Expectancy	6.06	4.88	6.00	5.12	6.25	4.81	6.33	4.89
ATTRIB	4.53	5.29	4.82	3.88	4.06	5.56	7.44	4.06

MAACL = Multiple Affect Adjective Checklist; VAS = Visual Analog Scale;
ATTRIB = Internal Task Attributions

APPENDIX B

Table II

Descriptive Statistics for Depression, Perceived Deprivation,

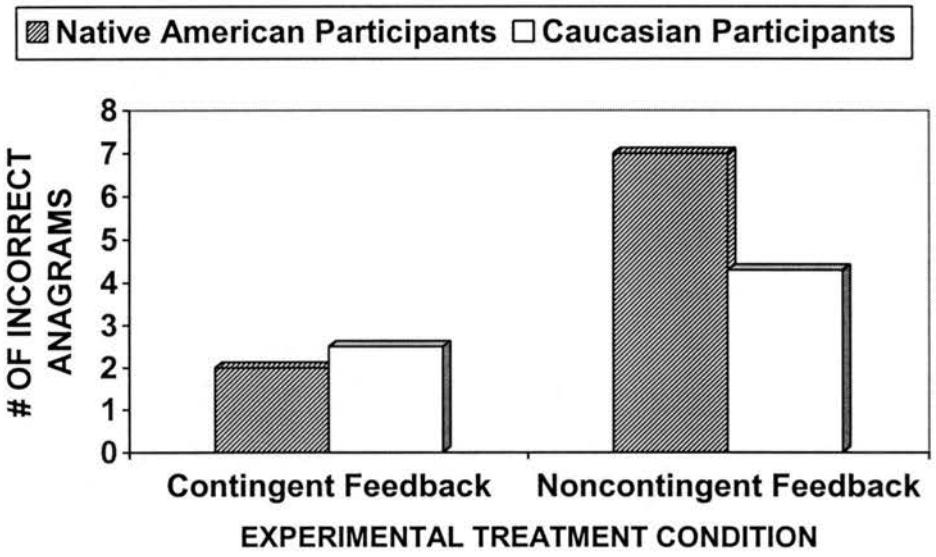
and Ethnic Identity Level

	Native American Participants		**Caucasian Participants**		
Measure	M	(SD)	M	(SD)	*p*
Inventory to Diagnose Depression	9.35	(5.40)	10.15	(7.58)	.62
Perceived Deprivation Scale	20.85	(12.59)	21.09	(11.59)	.94
Multi-Group Ethnic Identity Measure	40.85	(8.39)	35.03	(8.93)	.01

APPENDIX C

Figure 1

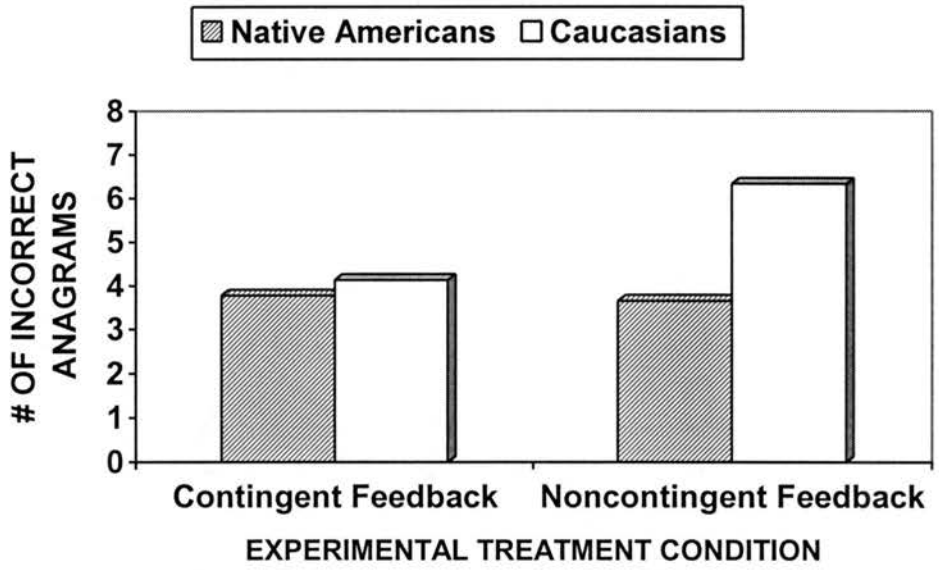
Anticipated Anagram Performance by Group and Condition



APPENDIX D

Figure 2

Observed Anagram Performance by Group and Condition



OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

DATE: 01-21-99 **IRB #: AS-99-029**

Proposal Title: THE ROLE OF LEARNED HELPLESSNESS IN PROBLEM-SOLVING PERFORMANCE OF NATIVE AMERICANS

Principal Investigator(s): John M. Chaney, Jennifer L. Robertson

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

Signature: Carol Olson (BC) Date: February 2, 1999

Carol Olson, Director of University Research Compliance
cc: Jennifer L. Robertson

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.